Overview of Statewide Water Conditions

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Introduction

- Governor’s Executive Order S-06-08 on drought
- Expedite drought-related climate research to help prepare for potentially dry 2009

Background

- 2007 & 2008 dry over most of state
- Statewide reservoir storage is declining
- Export restrictions in Sacramento-San Joaquin Delta curtail CVP and SWP deliveries

Water Year 2007

- First dry year following a wet 2006
- Northern California dry (Northern Sierra Precip. Accumulation 73% of average), Southern California drier
- Statewide groundwater & reservoir storage generally good – statewide reservoir storage ~90% of average

Sample Precip. Data, Percent of Annual Average, 2007

Eureka	92	
Redding	61	
Sacramento	67	
Fresno	55	
Bakersfield	49	
Long Beach	18	
Los Angeles	22	
Riverside	17	
San Diego	38	

Water Year 2007 – con't

- Sacramento Valley water year type index – "dry"
- San Joaquin Valley water year type index – "critically dry"
- State Water Project allocation at 60%
- Colorado River Basin remains in drought, but full deliveries continue from storage

Water Year 2008

- Second dry year
- Northern California dry (Northern Sierra Precip. Accumulation 70% of average), Southern California continues dry
- Statewide groundwater & reservoir storage declines – statewide reservoir storage ~73% of average

Water Year 2008 – con't

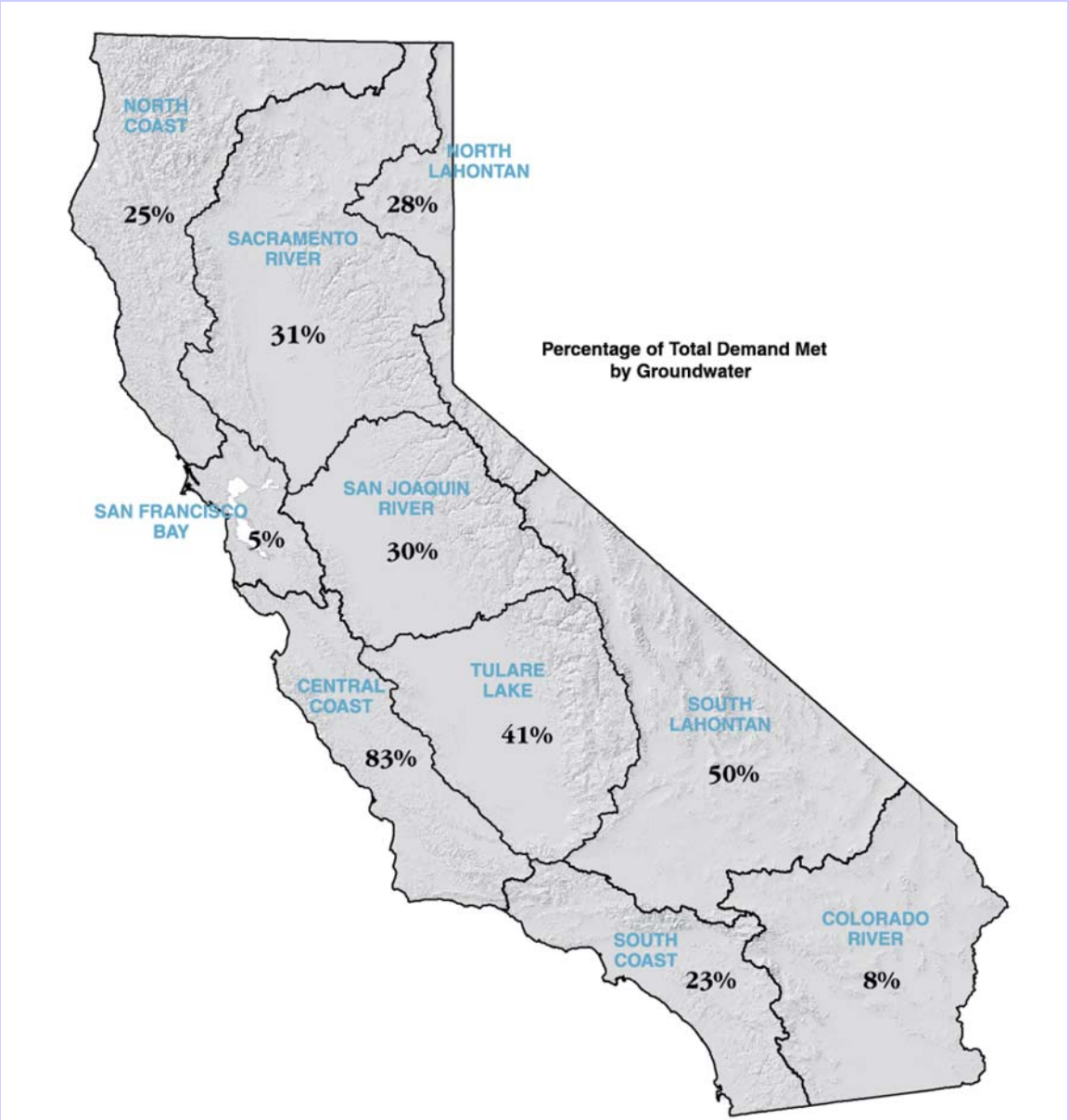
- Sacramento Valley and San Joaquin Valley water year type index "critical"
- State Water Project allocation at 35%
- SWP & CVP deliveries reduced due to Delta smelt restrictions
- Colorado River Basin runoff slightly above average, full deliveries continue from storage


Major Rivers
State Projects
Federal Projects
Local Projects
Redding
Sacramento
San Francisco
Fresno
Los Angeles
San Diego

Nov 6th Storage in Key Reservoirs
% of average

	% average	%capacity
• Oroville	48	29
• Shasta	48	29
• Folsom	48	24
• San Luis	25	14
• New Melones	85	46
• Millerton Lake	87	32

Agricultural and Urban Demand Supplied by Groundwater in Each Hydrologic Region



Defining Drought

- Many possible definitions – meteorological, hydrological, etc
- Fundamentally a function of impacts experienced by a given sector or affected entity
- Most recent statewide California drought was 1987-92
- Single driest year in measured hydrologic record was 1977

California's 20th Century Statewide Droughts

- 1918-20
- 1922-24
- 1929-34
- 1947-50
- 1959-61
- 1976-77
- 1987-92

1976-77

- State population about 22 million
- 1977 – driest year of record for statewide runoff
- 47 of 58 counties declared local emergencies
- Marin County emergency pipeline across San Rafael Bridge

1987-92 Drought Background

- Population about 30 million in 1990
- 23 counties declared local emergencies
- SWP & CVP made full deliveries during first four years of drought
- SWP cut to 0% agricultural & 30% urban in 1991 (however full Colorado River Aqueduct supply)

1987-92 Drought Impacts

- City of San Francisco storage dropped to 25% of capacity, 1991
- Extreme cutbacks in Santa Barbara area, construction of emergency pipeline
- Severe rationing/water haulage in some small communities in North Coast, Central Coast, and Sierra Nevada foothill areas

Typical Single Dry Year Impacts

- Increased wildfire risk
- Economic impacts to uses relying on unmanaged water supplies (dryland grain/hay, livestock grazing) (USDA “disaster declarations”)
- Increased risk of problems for small water systems/homeowners with private wells on fractured rock & coastal terrace groundwater sources

Impacts of Dry 2007-08

- Hydrologic drought significantly exacerbated by SWP/CVP cut-backs to protect Delta smelt
- Small systems/private residential wells on unreliable groundwater, major increase in well drilling
- Agricultural impacts -- unmanaged water uses (non-irrigated hay/grain, livestock grazing), and CVP south-of-Delta irrigation
- Calls for increased conservation/rationing by urban water agencies, to preserve carry-over storage
- Increased costs/damages related to wildfires

At-Risk Small Water Systems

- Isolated rural communities
- Systems on fractured rock groundwater
- Small groundwater basins w/ minimal recharge/storage capacities

Small Water Systems/Rural Areas

- Impacted soonest and to greatest extent by droughts
- Typically operate with little margin for error
- Public health & safety impacts -- lack of water for human consumption, sanitation, fire protection
- Private single-family residential well owners (est. ~ 2%-3% of state population)


California
Groundwater Basins
Preliminary Subject to Change
Hydrologic Study Area
Groundwater Basin
Hydrologic Study Areas
CC - Central Coastal
CD - Colorado Desert
NC - North Coastal
NL - North Lahontan
SB- Sacramento Basin
SC - South Coastal
SF - San Francisco
SJ - San Joaquin Basin
SL - South Lahontan
NC
SB
NL
SJ
CC
SL
CD
SC
Crescent City
Eureka
Redding
Susanville
Alturas
Chico
South Lake Tahoe
Sacramento
Santa Rosa
Stockton
San Francisco
San Jose
Monterey
Fresno
Bishop
Bakersfield
San Luis Obispo
Santa Barbara
Los Angeles
Palm Springs
El Centro
San Diego
50 0 50 Miles

2009 Water Supply Outlook

- Would require more than an average water year to restore depleted storage in many areas, especially in Delta export area
- Initial SWP allocation of 15% announced in October
- On average, about half of state's avg. annual precipitation occurs Dec-Feb


Emergency Well Drilling Project
funded by:
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